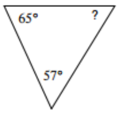
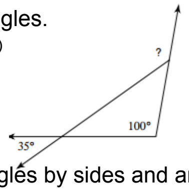
Find the missing angles.

1)

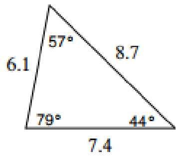


2)

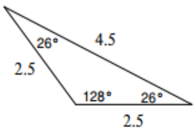


Classify the triangles by sides and angles.
acute, right, obtuse,
scalene, isosceles, equilateral

3)



4)

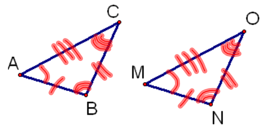


4.2 Apply Congruence and triangles

Congruent Triangles—same size and shape

$\triangle ABC \cong \triangle MNO$

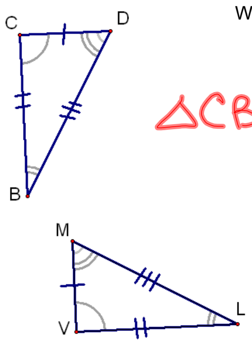
$\angle A \cong \angle M$ $\overline{AB} \cong \overline{MN}$
$\angle B \cong \angle N$ $\overline{BC} \cong \overline{NO}$
$\angle C \cong \angle O$ $\overline{AC} \cong \overline{MO}$



The corresponding parts of congruent triangles are congruent.

CPCTC

What triangles are congruent?



$\triangle CBD \cong \triangle VLM$

If $\triangle THE \cong \triangle SAW$, what parts are congruent?

$\angle T \cong \angle S$
$\angle H \cong \angle A$
$\angle E \cong \angle W$

$\overline{TE} \cong \overline{SW}$
$\overline{TH} \cong \overline{SA}$
$\overline{HE} \cong \overline{AW}$

Theorem 4.3—3rd Angle Theorem—If 2 angles of 1 triangle are ≅ to 2 angles of another triangle, then the 3rd angles are ≅.

Theorem 4.4--Properties of Congruent Triangles

Reflexive $\Delta ABC \cong \Delta ABC$

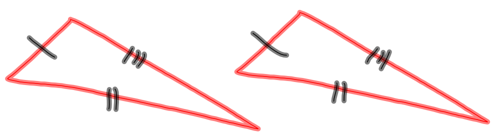
Symmetric If $\Delta ABC \cong \Delta MNO$, then $\Delta MNO \cong \Delta ABC$

Transitive If $\Delta ABC \cong \Delta MNO$ and $\Delta MNO \cong \Delta XYZ$, then

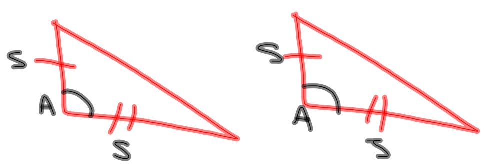
$\Delta ABC \cong \Delta XYZ$

4.3 Prove Triangles Congruent by SSS and SAS (section 4.4)

Postulate 19--Side-Side-Side(SSS)-If 3 sides of one Δ are congruent to 3 sides of another Δ, then the Δs are congruent.



Postulate 20--Side-Angle-Side(SAS)-If 2 sides and the included angle of one Δ are congruent to 2 sides and the included angle of another Δ, then the Δs are congruent.

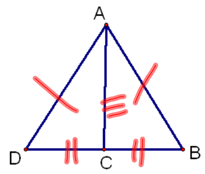


Things to keep in mind for these proofs:
Reflexive
Vertical angles are congruent
Def. of midpoint
Def. of angle bisector and segment bisector
Parallel line facts

and anything else we have learned

Given: C is the midpoint of $\overline{DB}$
$\overline{AD} \cong \overline{AB}$

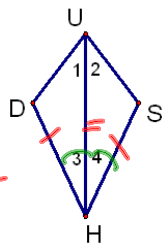
Prove: $\Delta ADC \cong \Delta ABC$



S.	R.
① C is midpt $\overline{DB}$ $\overline{AD} \cong \overline{AB}$ ✓	① Given
② $\overline{DC} \cong \overline{CB}$ ✓	② def of midpt
③ $\overline{AC} \cong \overline{AC}$ ✓	③ Reflexive
④	④ SSS

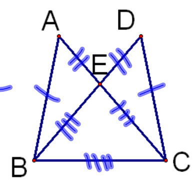
Given: $\overline{HU}$ bisects $\angle DHS$
$\overline{HD} \cong \overline{HS}$

Prove: $\Delta UDH \cong \Delta USH$



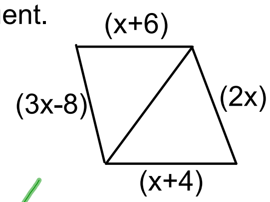
S.	R.
① $\overline{HU}$ bis. $\angle DHS$ $\overline{HD} \cong \overline{HS}$ ✓	① Given
② $\angle 3 \cong \angle 4$ ✓	② def of $\angle$ Bis
③ $\overline{UH} \cong \overline{UH}$	③ Reflexive
④ $\Delta UDH \cong \Delta USH$	④ SAS

Given: $\overline{AB} \cong \overline{DC}$; AE = DE; EB = EC
Prove: $\Delta ABC \cong \Delta DCB$



S.	R.
①	① Given
② $\overline{BC} \cong \overline{BC}$	② Refl.
③ DE+EB=DB AE+EC=AC	③ S.A.P.
④ AE+EC=DE+EB	④ Addition
⑤ AC = DB	⑤ Subst.
⑥ $\overline{AC} \cong \overline{DB}$	⑥ def of $\cong$
⑦ $\Delta ABC \cong \Delta DCB$	⑦ SSS

Find all values of x that make the triangles congruent.



~~$x+6 = x+4$~~

~~$6 \neq 4$~~

~~$3x-8 = 2x$~~

not possible

$x+6=2x$

$6 = x$

$3x-8=x+4$

$2x=12$

$x=6$

HW
p228-229
#s 3, 5-10, 16, 20
p236-238
#s 5-7, 21, 24, 26